Bulletin of the Academy of Sciences of the USSR Division of Chemical Science 1961 vol.10 N11, pages 1877-1883

Esters of β-ketophosphonic acids - Communication 8. Reaction of 2,6-dibromocyclohexanone with triethyl phosphite

Arbuzov B., Vinogradova V., Polezhaeva N.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

1. The reaction of triethyl phosphite with 2,6-dibromocyclohexanone follows a complex course. In addition to the expected diethylphosphoric ester of the enol form of the ester of cyclohexanone-2-phosphonic-1 acid, by-products are formed which are produced by conversions of the latter compound (diethyl ester of cyclohexanone-2-phosphonic-1 acid and tetraethyl ester of hypophosphoric acid), and also an intermediate product, diethyl bromo-6-cyclohexen-1-yl phosphoric ester [diethylcyclohexadien-1,5-yl phosphate, diethyl phenyl phosphate]. 2. The cis- and trans-isomers of 2,6-dibromocyclohexanone react differently with triethyl phosphite. The trans-isomer gives the diethylphosphoric ester of the enol form of the ester of cyclohexanone---phosphonic-1 acid as the main reaction product. With the cis-form the diethyl ester of cyclohexanone-2-phosphonic-1 acid is formed. In both cases, the products enumerated in paragraph 1 also are obtained.

http://dx.doi.org/10.1007/BF01184727